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ABSTRACT

This study was conducted to examine the relationship between the nature of the structured reflective experience provided in preservice teacher education and the content of preservice teachers' reflection. The study investigated whether the amount of reflection varied based on the instructional domain of a reflective teaching lesson (RTL) or whether the content of reflection varied based on the instructional domain of the RTL. Seventy-five preservice education teachers participated in the study. Each was presented with a reflective essay, written by preservice teachers after presenting a RTL to a group of four to six peers in an introductory pedagogy course, and previously analyzed for the content of reflection. Results suggest the following considerations for teacher educators: (1) RTLs are equally effective in stimulating reflective thought despite content differences; (2) reflective thinking will probably focus on implementation, planning, self, and the reflective experience; (3) the content or topics of reflection within those broad categories will vary based on the instructional domain and learning tasks of the RTL. (LL)

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The Relationship between Instructional Domain and the Content of Reflection Among Preservice Teachers

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The challenge of developing reflective practitioners has become an important emphasis in many of teacher preparation programs. Reflectivity, or the ability to assess situations and to make thoughtful, rational decisions, seems essential for teachers who, in today's schools, are confronted by situations and tasks that have little relationship to the tasks for which they were educated (Smyth, 1989) or to the classrooms described by many teacher education professors.

Several benefits have been suggested for preservice teachers who practice reflection. They interpret field experiences and classroom observations in more flexible, mature ways (Bolin, 1988) and they more frequently consider underlying assumptions and implications when analyzing classroom practices (Liston and Zeichner, 1987). Further, reflective preservice teachers seem better able to express themselves in a complex manner and are less anxious about student teaching (Cruickshank, Kennedy, Williams, Holton, and Fay, 1981b).

Yet reflection is not well understood by teacher educators. Little empirical research literature exists pertaining to reflectivity (Kuhn, 1986). We do know that preservice teachers can be taught to be more reflective (Troyer, 1988), and that students who are naturally predisposed to reflection benefit most from exercises in reflectivity (Ross, 1989). We also know that the students' preconceived values, knowledge, theories, and practices color their reflection (Zeichner and Liston, 1987). These orientations are resistant to change, even through reflection, yet students from all orientations value reflection (Rudney and Guillaume, 1990).

We also know that reflection can flourish only under specific conditions. That is, a situation or "real" experience to provoke reflection is vital (Dewey, 1933) and, at least initially, the instructor must structure and guide the reflection so that rigorous examination results (Cruickshank, 1987). We also know that the topic for reflection selected by the instructor may impact the level of reflective thinking (Ross, 1989). In this supportive, structured climate, reflectivity gradually develops (Korthagen, 1985).

If reflection is dependent on the experience provided, it is important to establish the impact of different experiences on reflection. The purpose of this study was to examine the relationship between the nature of the structured reflective experience provided and the content of preservice teachers' reflection. Reflective Teaching, a clinical experience developed by Cruickshank and others (1981a), was used to provide a structured reflective experience for preservice teachers.

Specifically, the study investigated the following questions:

1. Does the amount of reflection by preservice teachers vary based on the instructional domain of the Reflective Teaching Lesson used during the reflective experience?

2. Does the content of reflection by preservice teachers vary based on the instructional domain of the Reflective Teaching Lesson used during the reflective experience?

Method

For this study, 75 reflective essays previously analyzed for the content of reflection were selected (Bainer and Cantrell, in press). The essays were written by preservice teachers after presenting a Reflective Teaching Lesson to a group of four to six peers in an introductory pedagogy course. The essays were selected from the larger pool of essays because they represented four different RTLs. The RTLs involved learning tasks in different instructional domains.

The Discipline in the Elementary Schools RTL presents lower order skills (knowledge/comprehension) in the cognitive domain. For this RTL, the designated teacher presents the eight qualities of an effective teacher. Eighteen essays (24%) were written following this reflective experience. The Magic Squares RTL represents higher order skills (application/analysis) in the cognitive domain. The designated teacher leads students to apply five basic rules to solve mathematics puzzles. Twenty-three essays (31%) reflected on the Magic Squares lesson. The Origami RTL, represented in 22 essays (29%), engages learners in folding a paper butterfly, a psychomotor skill. The affective domain was represented by the Tobacco Task RTL, in which designated teachers attempt to increase students' tolerance for smokers and smoking. Twelve essays (16%) reflected on the Tobacco Task RTL.

Of the 75 preservice teachers providing essays for this analysis, 62 were females (83%) and 13 were males (17%). About two thirds (48 students, or 64%) were traditional students, while 27 students (36%) were non-traditional students over 24 years of age. Fifty-eight students (77%) were preparing to teach in elementary schools and 17 students (23%) were preparing for secondary education.

A profile of the content of reflection was constructed for each group of reflective essays by applying the nine-category classification system developed by Bainer and Cantrell (in press) from a previous analysis of the reflective essays. The reflective profiles presented the percent of reflective units in each of the nine categories of reflection (implementation, planning, self, the reflection experience, evaluation, learners, teachers, and the teaching and learning processes) for each of

the four RTLs. A reflective unit was defined as a passage within a reflective essay which exhibited focused reflection on one topic or contained one thought unit. Reflective units varied in length from a phrase to several sentences. Chi-square analysis was used to test for significant differences among the reflective profiles. Content analysis was applied to further delineate reflective units into subcategories and to provide descriptive terms. This enabled the researchers to identify qualitative or content differences in reflective units among the four RTL groups.

Results

This study investigated the relationship between the nature of the reflective experience and the content of the reflection provoked by the experience. Specifically, the analysis determined if the amount of reflection and the content of reflection varied based on the instructional nature of the Reflective Teaching Lesson taught by the designated teacher.

Amount of reflection. In the 75 essays analyzed, a total of 424 reflective units were identified and classified. The mean number of reflective units per essay was 5.65, ranging from a mean of 5.44 reflective units for reflective essays in the psychomotor domain (Origami task) to 6.50 reflective units in essays related to the affective Tobacco Task. No statistically significant difference was found in the amount of reflection among RTLs, as measured by the number of reflective units. That is, no RTL was more or less successful than any other in provoking reflection among the preservice teachers engaged in Reflective Teaching.

Content of reflection. The reflective profiles constructed for each of the four RTLs showed the percent of reflective units in each of the nine reflective categories (Table 1). For all four RTLs, most of the reflection (77 - 85%) represented four categories: implementation of the lesson; self as teacher; planning the lesson; and the reflective experience. Bivariate comparisons of the four-category profiles found no statistically significant differences among the four RTLs.

Table 1

Content analysis of the reflective units across RTLs showed that although the content of reflection seemed consistent across the four-category profiles, the specific topics addressed within the broad reflection categories were considerably different (Table 2).

Table 2

Similarities highlighted by the content analysis included the following observations.

1. For all four RTLs, the largest percentage of reflection focused on the effectiveness or importance of methods used by the designated teachers while implementing the RTL. Among the methods evaluated in the essays were visual aids, mnemonics, questioning, demonstration, practice and repetition, and use of examples and manipulatives. The importance of using a variety of strategies was a common theme in reflective essays across the four RTLs.

2. All four RTLs provoked a similar amount of reflection about the need to consider individual differences among students when developing lesson plans. Common among those reflections was a realization that teachers often must anticipate those differences:

> I learned that teachers must attempt to prepare in advance to accommodate unexpected learning difficulties and differences.

This aspect of planning was regarded as particularly difficult by the designated teachers:

> This lesson really made me think about learning while I was trying to come up with ideas to teach it. It is so hard to think of ways to involve all of the students learning styles. I had never thought about it until I sat down and tried to come up with a plan.

3. For all RTLs, thoughts about the reflective experience were much more positive than negative. There was considerable range across RTLs, however (see Table 2). Negative comments about the reflective experience centered on the "unrealistic time limit" and the perception that the lessons were "cut and dry". Positive reflections expressed that the Reflective Teaching experience was "invaluable" because it provided a realistic, "active, hands-on" teaching experience, because of the evaluation and immediate feedback provided by the learners involved, and because the content was "slightly unorthodox". The reflective experience was also judged to be fun and challenging, and reinforced to some designated teachers

that "there is more than one way to skin a cat."

Notable differences highlighted by the content analysis included the following observations.

1. Preservice teachers reflected more about the effectiveness of specific methods used to teach an RTL with tasks in the cognitive domain (Discipline and Magic Squares). They reflected least about the effectiveness of their chosen methodology following the affective task (Tobacco Task).

2. Reflection about the need to be flexible when teaching and to adjust the lesson to address emerging student concerns or needs was somewhat more frequent after the upper level, cognitive task (Magic Squares) and much more frequent following the affective task (Tobacco Task). Reflecting on the Tobacco Task, for example, preservice teachers recognized that teachers need to "effectively react to detours and take another approach." Many of the adjustments experienced by designated teachers while teaching this RTL seemed to arise from inexperience or inaccuracy in assessing students, shown in the following comments.

> I had assumed that my students would think a certain way but instead received an unexpected response.

> I was so surprised to find their results (ie. pretest results) as close to my desired objective, that I had to readjust my plan within a split second. I learned that the teacher had to be spontaneous in his approach to teaching any lesson. I need to expect the unexpected.

3. Only after teaching the affective lesson (Tobacco Task) did students reflect about their personal values in relation to teaching a lesson. This reflection was evident in three areas. First, designated teachers reflected about the internal conflict provoked when they were responsible to teach something with which they personally disagreed.

> I found myself feeling as though I was acting while I was teaching. Part of this was that I didn't believe what I was teaching any more than they did.

> Having grown up in a Christian school, I've often (in my Education classes) thought about the fact

> that I may end up teaching in a public school and I may end up with a lesson I don't agree with such as evolution. What would I do?

Second, designated teachers reflected about the need to understand one's personal values before a value-laden lesson can effectively be presented.

> The assignment showed that in order to teach issues they find controversial, teachers must first come to terms with their personal feelings and then decide upon their most comfortable method of teaching the subject. I understand now that teaching takes as much mental preparation as it does lesson preparation.

This self-examination was viewed by many preservice teachers as on-going and essential to ethical teaching.

> Although I am pleased with my apparent acting ability (ie. at teaching the lesson), I will always attempt to honestly understand some aspects of the person, policy, or issue that I'm faced with. I know that without at least a partial belief or understanding, I would see myself as little more than a dishonest manipulator of people and ideas.

Third, designated teachers reflected about the difficulty of planning and presenting lessons in the affective domain, mainly because they were unaware of appropriate strategies to "change the minds of adults" and because it was "difficult to keep a positive attitude" toward the subject matter. Some teachers recognized the power of the hidden curriculum especially during affective instruction:

> This reflective teaching lesson had made me realize the importance of the hidden curriculum and how it impacts teaching. Previously, I never realized how subtle the hidden curriculum can really be. As I was teaching my lesson, I gave no thought to the smile that crossed my face each time one of my students would impose an argument that I tended to agree with although it disagreed with the objectives I was trying to teach. Later, during our small group discussion I realized as a teacher this subtle smile

had greatly impacted my lesson. This subtle smile made it very apparent to my students that I did not totally agree with the objectives I was attempting to teach them.

4. Reflection about perceived weaknesses related to teaching strategies and personal teaching style were frequent with the two cognitive tasks (Discipline and Magic Squares) and the affective task (Tobacco Task). Designated teachers reflected on their need to "consciously give greater thought to what strategy" they will select for future lessons. Many pondered their need for better pacing or planning, or for more organization, flexibility, or clarity. Some preservice teachers were highly analytical of their teaching skills, as was the following student after teaching the Tobacco Task.

> I first recognized my need to develop a more effective technique for asking questions. The questions, which I had thoughtfully prepared, seemed too "patented" when presented in the classroom setting and they evoked little more than short answers from the students. Similarly, I learned that I must refrain from supplying the answers and instead, learn to rephrase my questions so that my students have the chance to work through the problem.

Such reflection about pedagogical skills was rare with the psychomotor task (Origami). Instead, preservice teachers reflected much more on personal qualities that made them effective or ineffective while teaching the Origami RTL, including patience, enthusiasm, confidence, reflectivity, and flexibility.

5. Only with the lower order cognitive task (Discipline) and the psychomotor task (Origami) did preservice teachers reflect about their expectations of the students, especially the difference between how quickly they learned the task contrasted with how quickly their learners learned it. Generally these reflections showed unmet expectations about how quickly the learners should have learned the RTL task, followed by recognition of individual differences in learning rates. The following quotes illustrate these student expectations.

> As a teacher, I learned that I expected students of my own age to catch on to things as quickly as I do.

> I was overly concerned that I would offend my students by breaking the origami down into simpler steps. I assumed that since I could "see" how to fold the butterfly from the diagrams, that everyone else possessed the same ability.

6. Reflection about the importance of planning carefully, of framing and following specific objectives, and of the large amount of time required for planning even a short lesson was much more frequent following the lower order cognitive task (Discipline) than any other RTL. Students reflected that teaching "is not something one plunges into without having taken the necessary steps in preparing the lesson" and noted that by using objectives "you can really get the students to learn what you want them to learn." A recurring theme suggested that preservice teachers were dissatisfied with the lower order objectives for this lesson this, and viewed "real" learning as something more.

> Every student passed the test, but I as a teacher, did not feel satisfied with what they learned. Yes, the students learned the behaviors, but I did not feel that they could explain to me what the behaviors meant and I did not feel they would remember the behaviors two weeks from now. I think the most important concept I learned in this reflective teaching lesson was that if possible, the learning students accomplish should be higher order learning so the information can be remembered and retrieved at a later date.

7. Only after the psychomotor task (Origami) did preservice teachers reflect about the importance of thoroughly understanding the content of the lesson prior to teaching it. Preservice teachers cited vague directions and the nature of the origami task itself as problematic. The difficulty in preparing to teach the origami lesson seemed focus reflection on the importance of knowing "your materials and instructions thoroughly prior to giving the lesson."

Although it was not part of the four-category reflective profile, reflection in two additional categories (learners and evaluations) is educationally significant to

teacher educators seeking to provide reflective experiences for preservice teachers. Reflection in these two categories also varied across the four RTLs.

8. Reflection about differences in learning styles was much more frequent in essays written after presenting the two cognitive tasks (Discipline and Magic Squares) and the psychomotor task (Origami) than with the affective task (Tobacco Task). However, reflection about individual differences among learners or learner characteristics (ability, attitudes, etc.) were proportionately more frequent with the affective task (Tobacco Task) and psychomotor task (Origami) than with the two cognitive tasks.

9. Reflection about evaluation varied considerable across RTLs. For the lower level cognitive task (Discipline), reflection dealt solely with summative evaluation, especially how "teaching to the test" limited instruction. Conversely, evaluation reflection following the upper level cognitive task (Magic Squares) dealt solely with formative evaluation, especially the importance of assessing students' understanding throughout the lesson and using that evaluation to improve teaching. In addition to these two foci, reflection about evaluation following the psychomotor task (Origami) considered the frustration and difficulty of assigning grades, as in the following reflective unit.

> The evaluation process was frustrating. I felt I could only give 3's to students who had followed all the steps correctly and had neat butterflys. What was hard was seeing how satisfied and pleased the one fearful learner was with himself and then having to give him a 2 because his product was torn. His attitude and enthusiasm had come so far.

Reflection about evaluation following the affective task (Tobacco Task) was rare.

Discussion and Implications

This study provides important considerations for teacher educators choosing to use Reflective Teaching as one method to encourage reflection among preservice teachers. It suggests that, at least for the four RTLs studied, the RTLs are equally effective in stimulating reflective thought despite their apparent content differences. Further it suggests that preservice teachers' reflective thinking will probably focus on four categories: implementation, planning, self, and the reflective experience. The content or topics of reflection within those broad categories will, the data suggest, vary based on the instructional domain and

learning tasks of the RTL.

This information should help teacher educators select reflective experiences likely to provoke thought concerning topics which are part of their curriculum and objectives. Also, this information should help teacher educators anticipate the reflective content that might naturally arise from the use of specific RTLs, and to be better prepared to lead preservice teachers to closely and thoughtfully explore those topics.

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Table 1: Reflective Profiles of Four Reflective Teaching Lessons

Category	Discipline in Elem. Sch (N = 18)		Magic Squares (N = 23)		Tobacco Task (N = 12)		Origami (N = 22)	
	N	%	N	%	N	%	N	%
Implementation	26	27	38	30	23	29	40	33
Self	33	34	35	28	21	27	27	22
Planning	11	11	13	10	12	15	17	14
Reflective Experience	13	13	11	9	10	13	17	14
Learners	8	8	11	9	6	8	6	5
Evaluation	5	5	8	6	2	3	7	6
Teaching Process	2	2	5	4	3	4	4	3
Teachers	-	-	5	4	-	-	3	2
Learning Process	-	-	-	-	1	1	1	1
TOTAL	98	100	126	100	78	100	122	100
Mean Reflective Units	5.44		5.48		6.50		5.55	

Table 2: Percent of Reflective Units in Content Categories

Content Category	Discipline in Elem Sch	Magic Squares	Tobacco Task	Origami
Implementation				
Method	65	58	43	53
Time	12	5	4	10
Flexibility	8	13	17	5
Affective	--	--	30	--
Self				
Method used/needed	24	6	33	4
Teaching Style	9	26	9	4
Characteristics	24	17	24	48
Student Expectations	12	2	--	11
Affective	--	--	14	--
Planning				
Objectives	30	8	17	12
Important	40	15	17	18
Time Involved	30	15	8	18
Individual Differences	9	15	8	12
Affective	--	--	33	--
Content/Understand	--	--	--	24
Reflective Experience				
Positive	83	55	40	82
Negative	15	27	10	6
Learners				
Learning Styles	88	64	17	67
Individual Differences	12	18	50	33
Motivation	--	18	33	--

Table 2. Cont.

Content Category	Discipline in Elem Sch	Magic Squares	Tobacco Task	Origami
Evaluation				
Formative	--	100	--	43
Summative	100	--	50	57